

Grade Stabilization Structure...a structure used to control the channel grade in natural or constructed watercourses



Grade stabilization structure, photo courtesy USDA – Natural Resources Conservation Service

Purposes

The following purposes apply to this practice:

- ☒ **To stabilize grade**
- ☒ **To reduce gully erosion**
- ☒ **To improve water quality**

Benefits

The practice is helpful in reducing sediment loading to streams and waterways. It is also effective at preventing head cutting.

Applications

This practice applies in areas where the concentration and flow velocity of water requires structures to stabilize the channel grade or to control gully erosion. This practice does not apply to structural inlets to sink holes.

Design and Installation

Grade stabilization structures are located so that the elevation of the inlet of the spillway is set at an elevation that will control upstream headcutting.

A wide range of alternative types of structures are available for this practice, including embankment dams, pond size dams, full-flow open structures, island-type structures, and side-inlet drainage structures. An intensive site investigation is required to plan and design an appropriate grade stabilization structure for a specific site.

Once the structure is established, a protective cover of vegetation shall be established on all exposed surfaces of the embankment, spillway, borrow area, and disturbed areas. Temporary vegetation may be used until permanent vegetation can be established.

Maintenance

Periodically inspect the area for any damage, deterioration, or maintenance needs. Promptly repair eroded areas and re-establish vegetative cover where erosion has removed seeding. Ensure that all spillways remain open and remove trash or debris that may accumulate around the entrance.

Protective vegetation should be fertilized when necessary to maintain a vigorous cover. To prevent growth of large woody-stemmed weeds, water plants, or other undesirable vegetation, mow, spray, or chop out such vegetation from the embankment and spillway areas.

Relative Cost

Installation low ● ● ● ● ○ high

Maintenance low ● ● ● ● ○ high

For Additional Information...

Visit the Minnesota NRCS office online at <http://www.mn.nrcs.usda.gov/>, see the Minnesota Field Office Technical Guide (FOTG) standard for (410) Grade Stabilization Structure, or contact your local USDA-NRCS office.

Local USDA-NRCS contact information